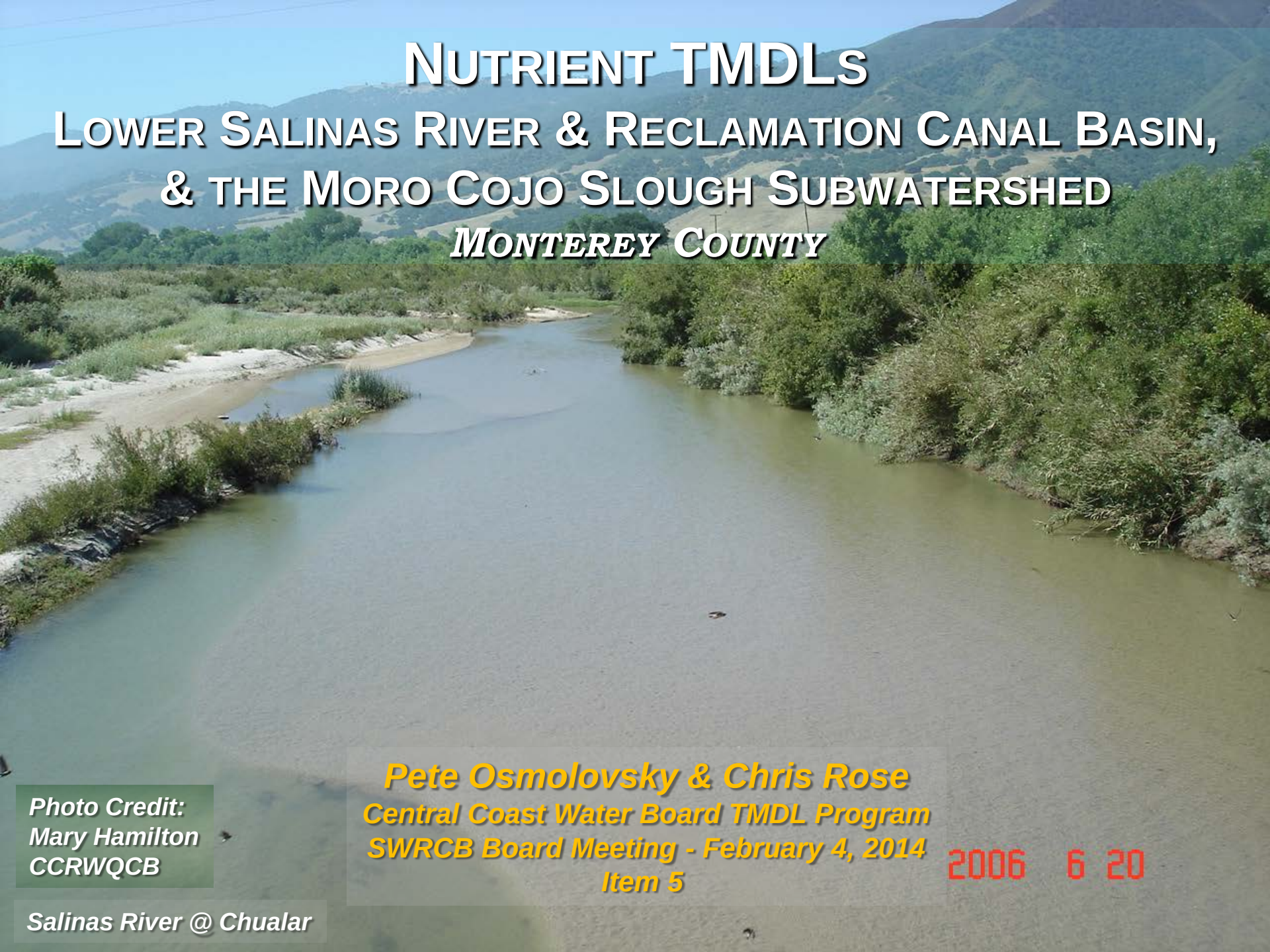
Nutrient TMDLs

Lower Salinas River & Reclamation Canal Basin, & the Moro Cojo Slough Subwatershed

Monterey County



Pete Osmolovsky & Chris Rose
Central Coast Water Board TMDL Program
SWRCB Board Meeting - February 4, 2014
Item 5

Photo Credit:
Mary Hamilton
CCRWQCB

Salinas River @ Chualar

Staff Recommendation…

Adopt Proposed Resolution

Proposed Additions to Cent. Coast Basin Plan:

1. TMDLs and Implementation Plan for Nitrogen Compounds & Orthophosphate for lower Salinas Valley**

** *Includes Lower Salinas River and Reclamation Canal Basin and Moro Cojo Slough Subwatershed*

TMDL Highlights...

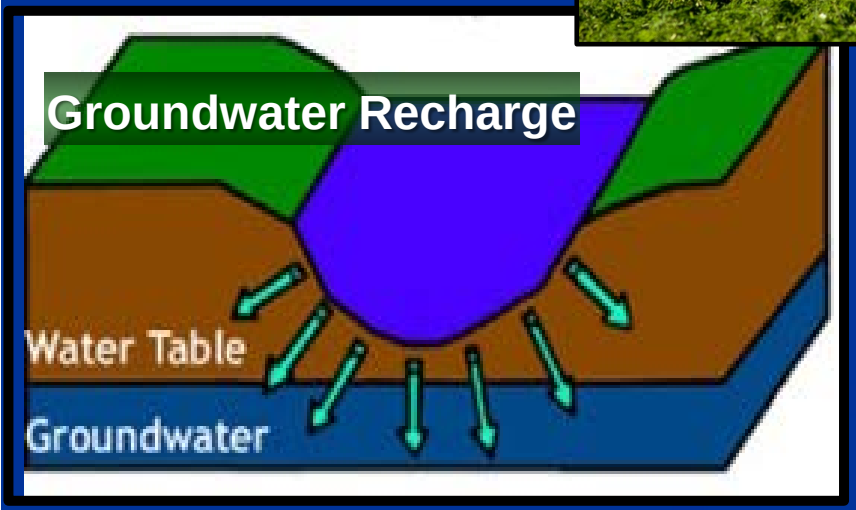
- Establish TMDLs and an implementation strategy to address nutrient pollution of streams in lower Salinas Valley
- Use existing regulatory measures to implement TMDL goals
- TMDL consistent with Cent. Coast Water Board's highest priorities
- TMDL has been independently peer reviewed by scientists
- USEPA reports: TMDL meets federal requirements under CWA

State Board Meeting Public Comments…

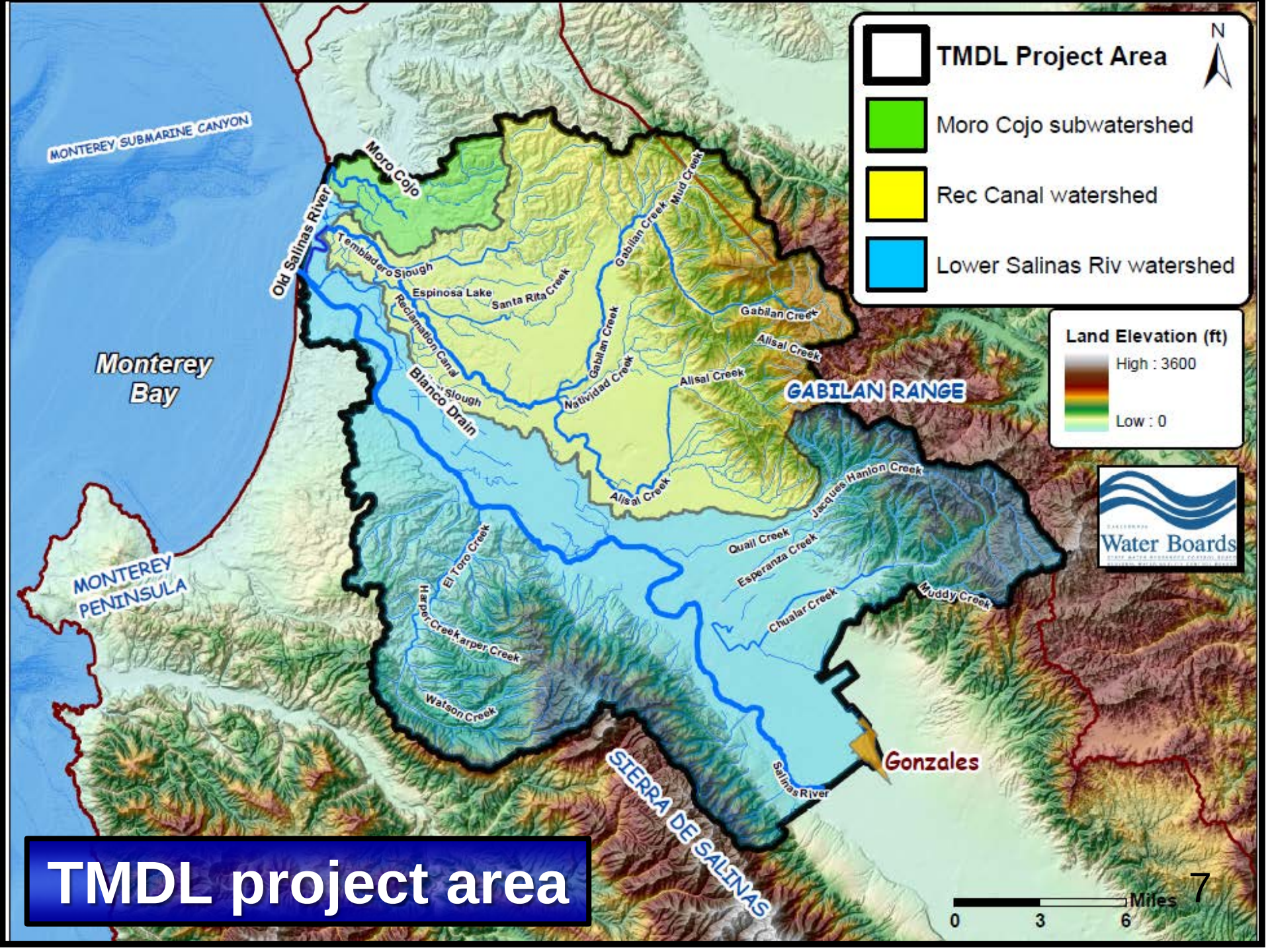
Comments for State Board Meeting

- Calif. Farm Bureau, Western Grower, & Grower Shipper of the Central Coast
- Jacquelyn Griffith (general public)
- Kay Mercer (KMI)

Wrap-up: We Recommend TMDL Adoption…



Supplemental Presentation Slides…

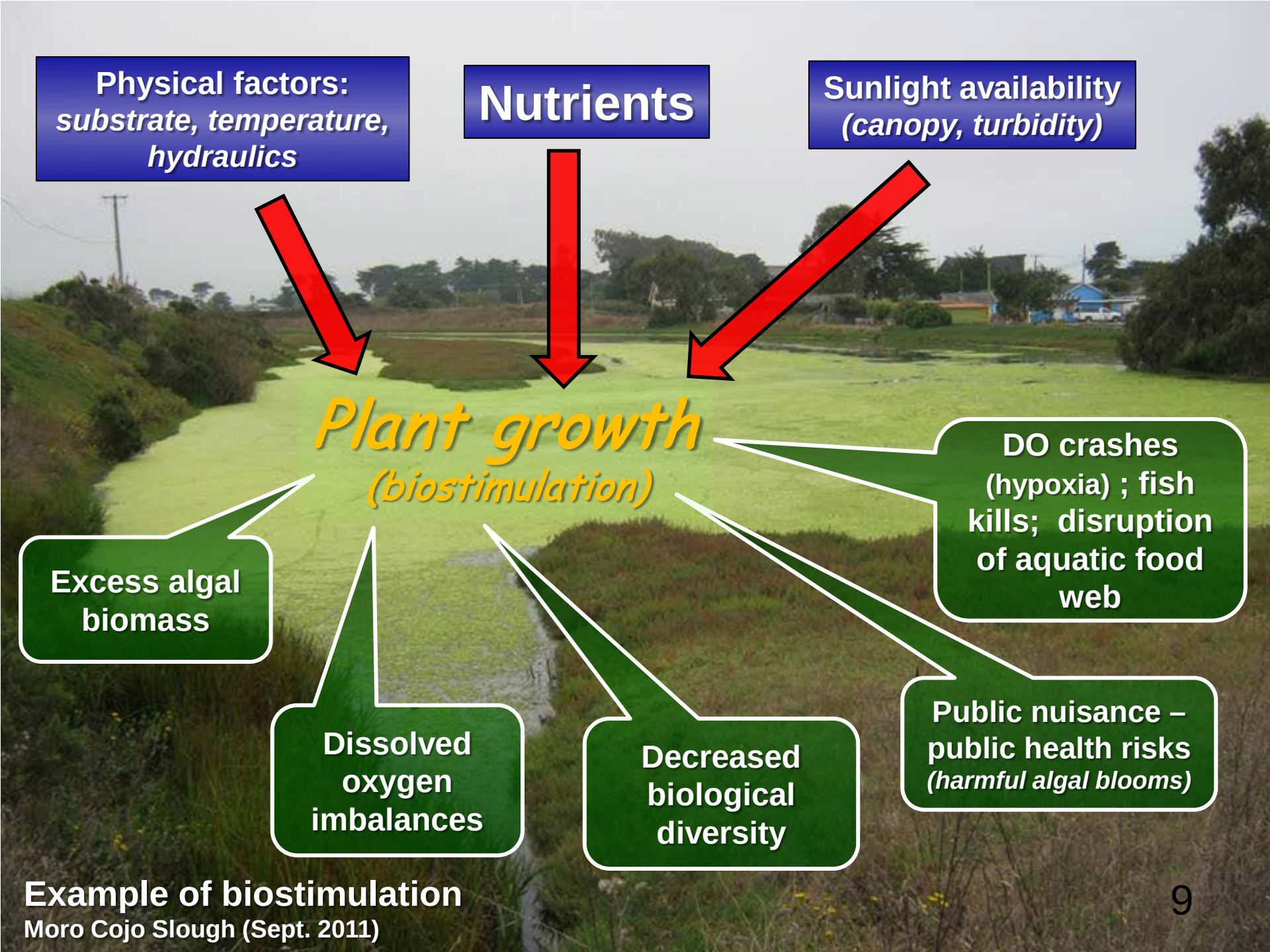


TMDL project area

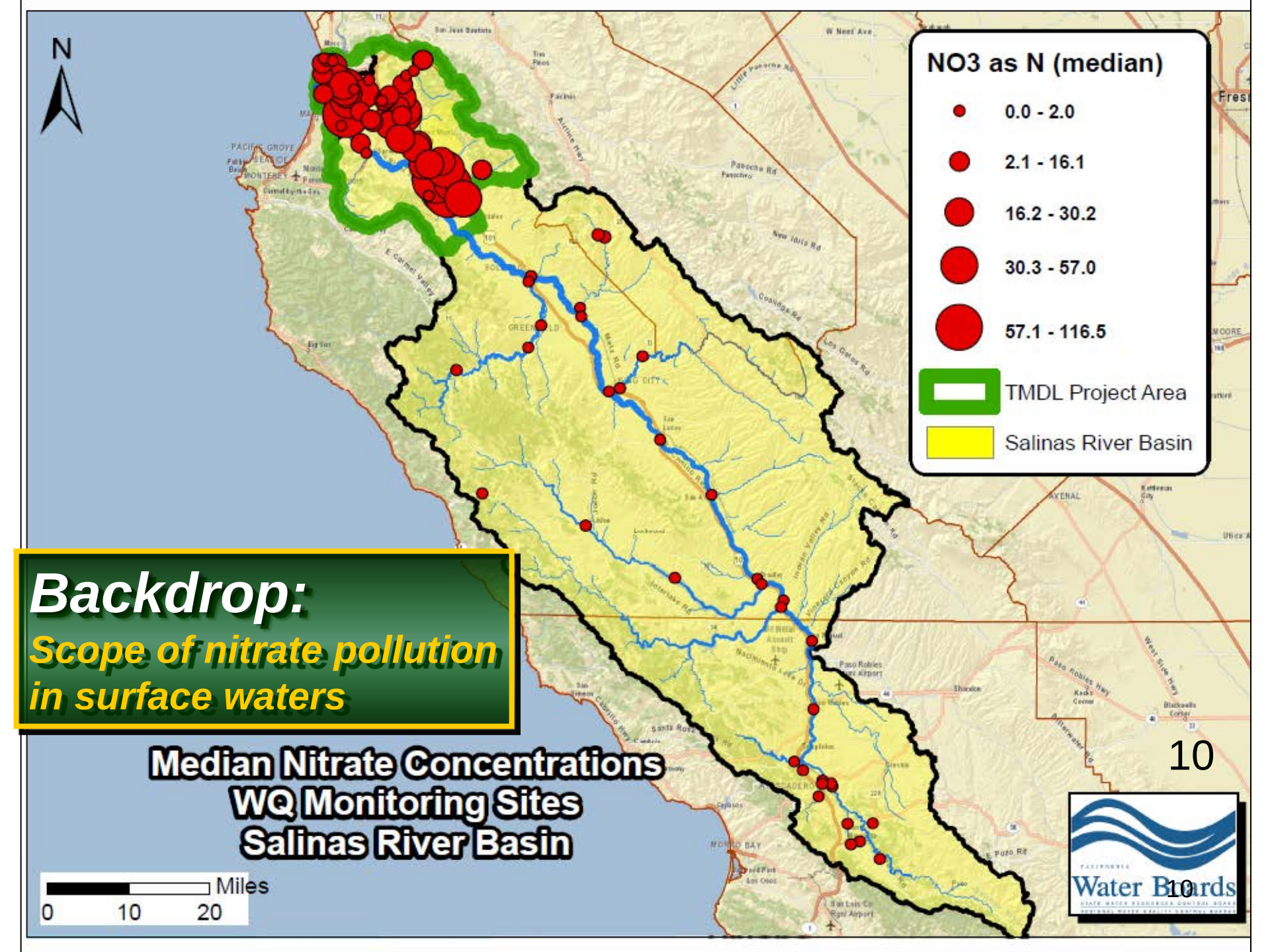
Backdrop: Nutrient Pollution (nitrogen & phosphorus)

Excessive Nutrients may cause…

- **Toxic Effects *(degradation of drinking water sources)***
- **Degradation of Aquatic Habitat *(biostimulation)***
- **Public health risks and nuisance *(algal toxins)***
- **Degradation of irrigation supply *(for sensitive crops)***



Example of biostimulation
Moro Cojo Slough (Sept. 2011)


N
NO3 as N (median)
0.0 - 2.0
2.1 - 16.1
16.2 - 30.2
30.3 - 57.0
57.1 - 116.5
TMDL Project Area
Salinas River Basin
Backdrop:
Scope of nitrate pollution in surface waters
Median Nitrate Concentrations
WQ Monitoring Sites
Salinas River Basin
Miles
0
10
20
10
Water Boards

Nutrient TMDL Development…

Spring 2010 through Jan. 2013

4 Public Workshops: June 2010, April 2011, Oct. 2011, Nov. 2012

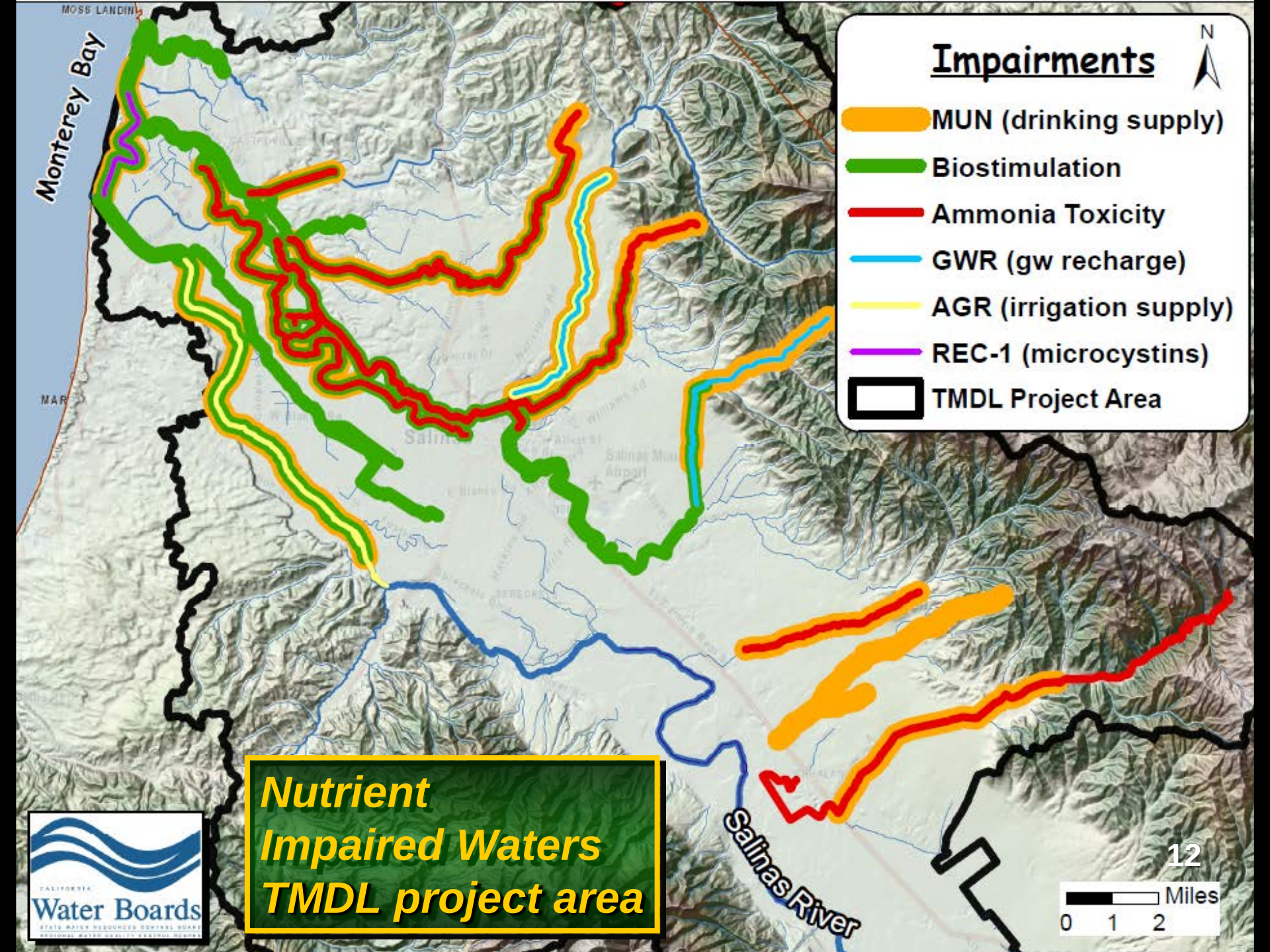
Data analysis, & input from stakeholders & interested parties

Independent Scientific Peer Review: Spring 2012

Review by SWRCB Office of Chief Counsel

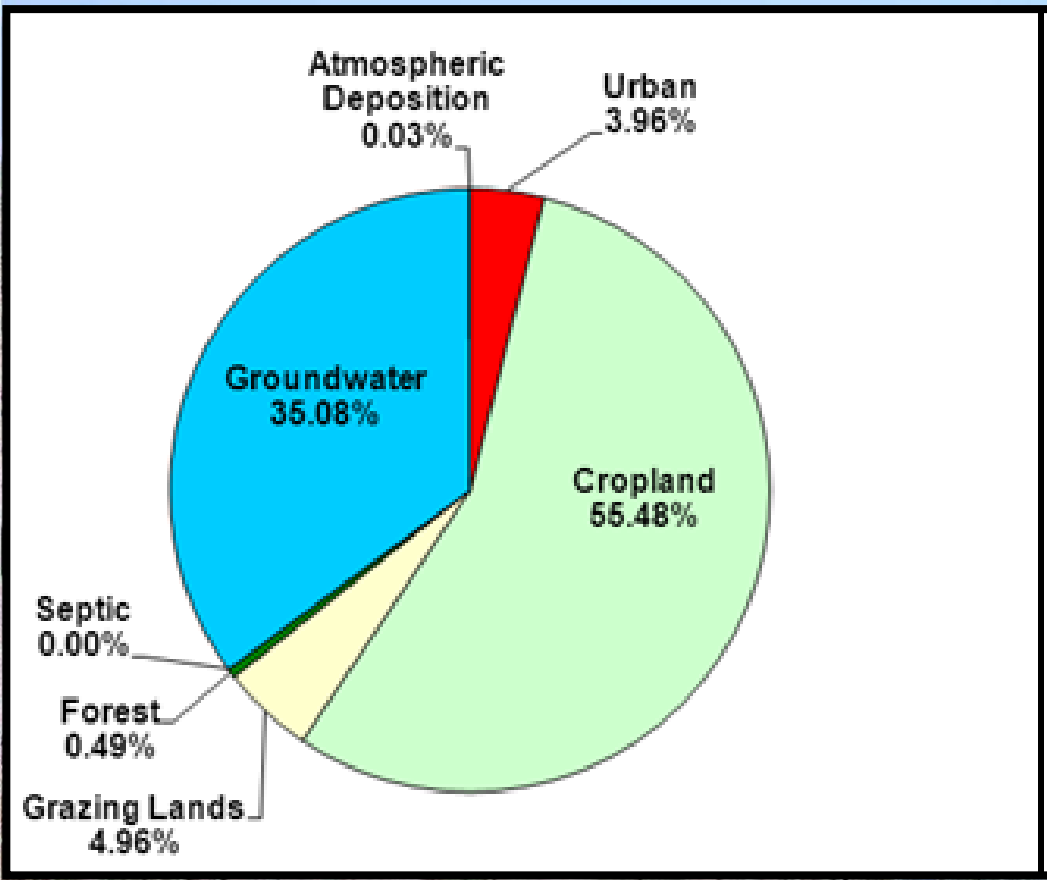
Review by USEPA

Public Review & Written Comments: Fall 2012

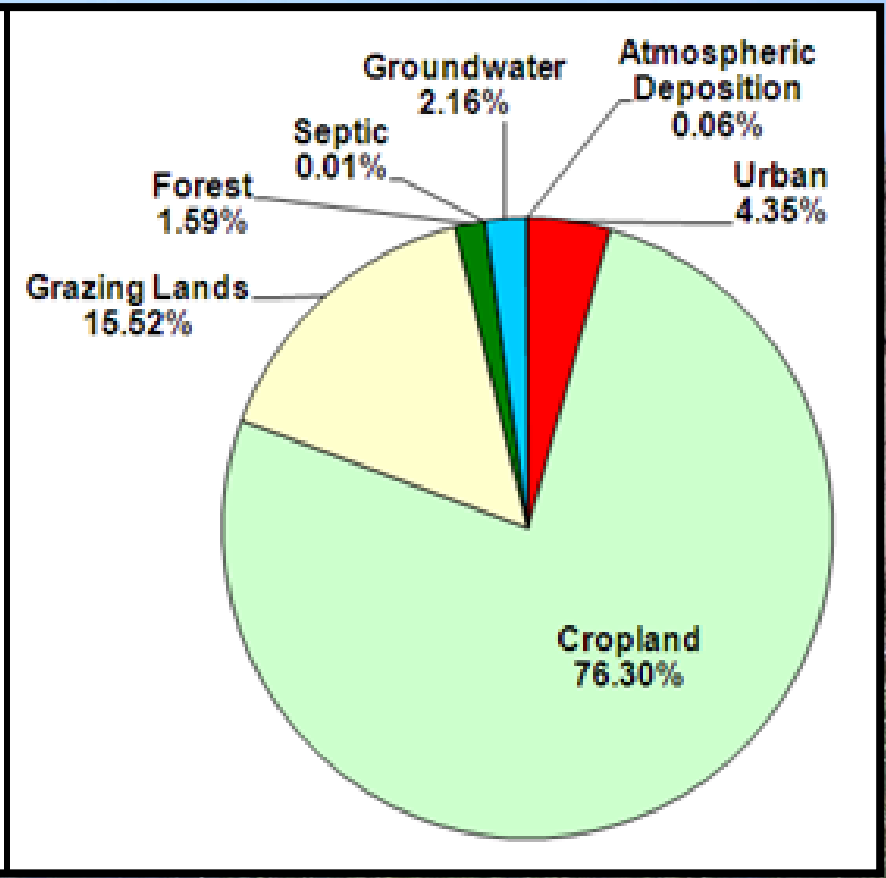

Monterey Bay
MOSS LANDING
Impairments
N
MUN (drinking supply)
Biostimulation
Ammonia Toxicity
GWR (gw recharge)
AGR (irrigation supply)
REC-1 (microcystins)
TMDL Project Area
Nutrient
Impaired Waters
TMDL project area
Salinas River
Miles
0 1 2
12
California Water Boards

TMDL Source Analysis…

Nitrogen Sources



Phosphorus Sources



Reclamation Canal @ La Guardia St. . (July 2006)
Photo: Cooperative Monitoring Program

Nutrient Numeric Target Development…

Basin Plan Nutrient Water Quality Standard:

Biostimulatory Substances *(Narrative Regulatory Standard)*

"Waters shall not contain bio-stimulatory substances in concentrations that promote aquatic growths to the extent that such growths… affect beneficial uses."

Staff's Numeric Target Development Approach…

- Approaches used in previous approved TMDLs;
- USEPA recommended methodologies;
- California NNE approach

TMDLs Summary…

Constituent *Impairment Addressed*	Characterization of Numeric Threshold	Stream Numeric Targets (TMDLs) (mg/L)
Nitrate *Drinking water, groundwater recharge*	Concentration-based Basin Plan Objective *(Regulatory Standard)*	**10**
Unionized ammonia *Toxicity*	Concentration-based Basin Plan Objective *(Regulatory Standard)*	**0.025**
Nitrate *Biostimulation (aquatic habitat)*	Concentration-based targets derived from USEPA & SWRCB-recognized methods *(non-regulatory TMDL Target)*	**1.4 – 8.0** *(sci. peer reviewed)*
Orthophosphate *Biostimulation (aquatic habitat)*	Concentration-based targets derived from USEPA & SWRCB-recognized methods *(non-regulatory TMDL Target)*	**0.07 – 0.3** *(sci. peer reviewed)*

Nutrient-Response Indicator Targets *(desired conditions)*

Constituent *Impairment*	Characterization of Numeric Threshold	Stream Numeric Targets
Dissolved Oxygen *Biostimulation* *(aquatic habitat)*	**Basin Plan Objective** *(Regulatory Standard)*	*Not to be depressed below* **5 mg/L** (WARM) **7 mg/L** (COLD)
Oxygen saturation *Biostimulation* *(aquatic habitat)*	**Basin Plan Objective** *(Regulatory Standard)*	*Not to be depressed below* **85%** median
Oxygen supersaturation *Biostimulation* *(aquatic habitat)*	**Sci. Literature Threshold** *(non-regulatory TMDL Target)*	*Not to exceed* **13 mg/L**
Chlorophyll *a* *Biostimulation* *(aquatic habitat)*	**Sci. Literature Threshold** *(non-regulatory TMDL Target)*	**≤ 15 µg/L**
Microcystins *(algal toxins)* *Biostimulation* *(Toxicity- REC1)*	**Basin Plan Narrative Obj.** **(Calif. OEHHA health guideline)** *(non-regulatory TMDL Target)*	**≤ 0.8 µg/L**

Proposed TMDL Implementation Plan…

- *TMDLs do not self-implement…*

TMDL Implementing parties & regulatory mechanisms…

Irrigated Ag…

- **Comply with Agricultural Order = TMDL Implementation**

MS4 Stormwater Entities…

- **NPDES permits = TMDL Implementation**
  - ✓ **City of Salinas & Co. of Monterey**

Proposed TMDL Non-regulatory Milestones…

12 year Interim Goal
Attain nitrate drinking water standard & toxicity objective in surface waters

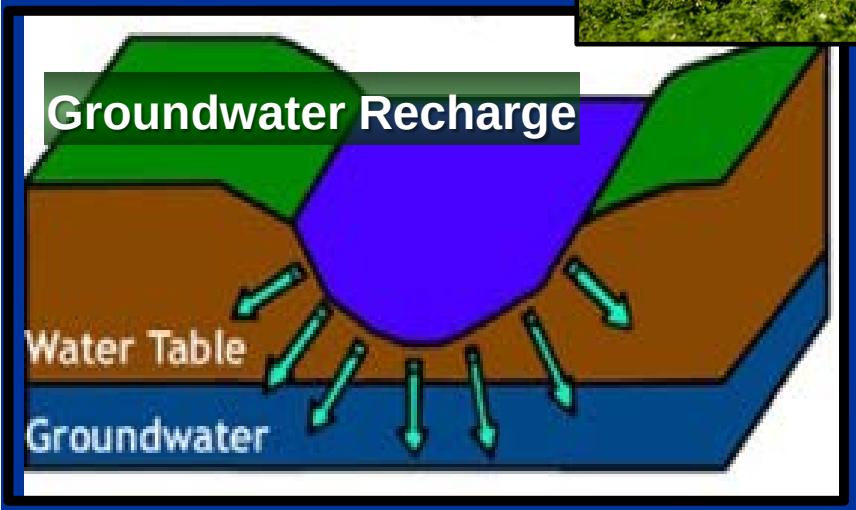
TMDL Re-consideration:
Propose Water Board re-visits, re-considers, revises TMDL in 10 years, as appropriate based on new research and data

20 year Interim Goal
Attain wet-season biostimulatory targets in surface waters

30 year Final Goal
Attain more-stringent dry season biostimulatory targets in surface waters

Old Salinas River - biostimulation
Oct. 2011

Wrap-up: We Recommend TMDL Adoption…



Questions & Discussion...

Tembladero Slough
July 2009